

# VOLTMAN Improvements

## *Abstract*

Cycle time reduced from 2.5 min down to  
25-30 sec.

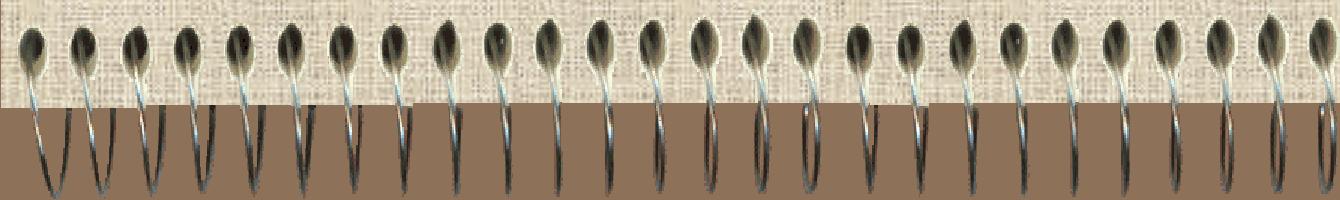
Marcin Wolter

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1



# What was done?

- All the Sleep() commands checked, unnecessary ones removed.
- No averaging over few readouts for switch PS.
- System examines the COMM port buffer size, waits until all channels are read out. In case of failure the procedure is repeated
- Unnecessary lag after writing to iFIX DB removed.
- These improvements reduced the cycle time from 2.5 min to about 1 min.

## What was done? (cont.)

- Trigger alarms immediately after finding a faulty PS, not at the end of the cycle.
- Write into history database every five cycles (~5mins).
- Robustness of the digital info readout improved (PEI) - faulty readout can not trigger alarm.



## Parallel readout

- Read requests send to Power Supplies in all nine daisy chains.
- Then data read out from all nine lines.
- Readout time limited by the slowest PS.
- Entire cycle time limited by the longest/slowest daisy chain (first floor).
- **Cycle time 25 s – 30 s.**

## How is the cycle time shared?

- **8 s – writing to iFIX databases**
  - VOLTMAN database
  - 1 s - eda\_lookup, eda\_wait
  - 5 s – eda\_set\_float, eda\_set\_ascii, preparing the tag collection
  - 1 s – eda\_write – actual writing
- **1 s – 2 s – writing trigger inhibits**
- **15 s – 18 s – reading power supplies.**

# Improvement

- Cycle time reduced from ~2.5 min down to 25-30 sec (used to be about 20 min one year ago).
- Average reaction time ~15 sec.
- **Question:** Is it acceptable not to average over few readouts for switch power supplies?

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6

# Future work

## Improve hardware

- The waiting time after sending a request varies from 70 msec (SMD, part of first/second floor) up to 300-1000 msec for BSU/BMU („Muon Chain“) and remote part of the first floor PS.
- Better connection (repeaters, grounding?) could help.

## Rebuild the system

- Read each of 9 daisy chains by a dedicated APACS module.

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7

# Summary

- Progress done – from 2.5 min (initially even 20 min) cycle down to about 1/2 minute.
- Our goal is speed, nod readout accuracy (in fact VOLTMAN readouts are not very precise – BNB calibration, floating ground?).



## Tags for Global\_Alarms page

- **psm\_alr\_mon** # of monitored PS
- **psm\_wrn\_mon** # of monitored PS
- **psm\_alr\_ign** # of ignored PS
- **psm\_wrn\_ign** # of ignored PS
- **psm\_alr\_cur** # of alarms
- **psm\_wrn\_cur** # of warnings since the last program restart.